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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,476	01/10/2002	Ray A. Walker	10019374-1	9903

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EXAMINER

LIANG, LEONARD S

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 07/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,476

Applicant(s)

WALKER, RAY A.

Examiner

Leonard S Liang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claim 11 is objected to because of the following informalities: Claim 11 states "The ink-level sensing system of claim 7..." However, claim 7 discloses a replaceable printing component, not an ink level sensing system. It will be construed that the claim should state "The replaceable printing component of claim 7..." Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

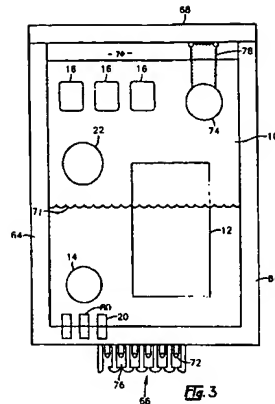
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 7, 9, 12-13, 15, 18-20, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Maurelli et al (US Pat 6099101).

Maurelli et al discloses:

- {claim 7} A replaceable printing component for use in a printing system, the replaceable printing component for containing a supply of print material for use by the printing system to form images on media (abstract; column 1); a reservoir having an interior space for containing printing material (figure 3, reference 64); and a linking device disposed entirely within the interior space of the reservoir for emitting a signal indicative of printing material within the interior space of the reservoir wherein the reservoir is formed of a material so that the emitted signal passes through the reservoir for providing information to the printing system (figure 3, reference 14; column 5, lines 14-24; column 6, lines 58-67)



- {claim 9} the replaceable printing component is a replaceable ink reservoir (abstract; column 1); the linking device includes a sensor that provides an output signal indicative of ink within the interior space of the ink reservoir and wherein the output signal is coupled to the printing system by the linking device (column 5, lines 14-24; column 6, lines 58-67)
- {claim 12} the reservoir does not contain electrical conductors that extend from within the interior space of the reservoir to a location outside the reservoir (figure 3)
- {claim 13} A printing system having a printer portion and at least one replaceable print material reservoir, the printer portion and the at least one replaceable print material reservoir exchanging information therebetween (figure 3); a first wireless link associated with the replaceable print material reservoir, the first wireless link disposed entirely within an interior space for containing print material within the replaceable print material reservoir; and a second wireless link associated with the printer portion, the second wireless link receiving replaceable reservoir information from the first wireless link by transmission of information in a wireless manner (figure 3, reference 12, 14)
- {claim 15} the replaceable print material reservoir is a replaceable ink reservoir and wherein the replaceable information is ink level information for the replaceable ink reservoir (abstract; column 1)
- {claim 18} the printer portion is an ink jet printer and wherein the replaceable print material reservoir contains ink (figure 3; abstract; column 1)

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- {claim 19} A method for transferring status information from an ink reservoir to a printer portion (column 6, lines 58-67); determining status information of the ink reservoir using a sensor disposed within an interior space of the ink reservoir, the interior space of the ink reservoir for containing ink (figure 3, reference 14); transferring status information using a wireless link from the interior space of the ink reservoir through a sidewall of the ink reservoir to the printer portion (column 6, lines 58-67)
- {claim 20} the printer portion is an ink jet printer and wherein the status information is ink level information in the ink reservoir (figure 3; abstract; column 1)
- {claim 22} A replaceable ink container for providing ink to an inkjet printing system (abstract; column 1); a sensing system within an interior space of an ink reservoir for sensing parameters of ink within the ink reservoir, the interior space of the ink reservoir for containing ink, and wherein ink type within the ink reservoir is determined by the inkjet printing system based on the sensed parameters (figure 3, reference 14)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 8, 10-11, 14, 16-17, 21, and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurelli et al (US Pat 6099101) in view of Walker (US Pat 6302527).

Maurelli et al discloses:

- {claim 1} An ink level sensing system for determining ink level in an ink reservoir and providing this ink level information to a printing system (abstract); an ink reservoir having an interior space for containing ink, the ink reservoir having a sensor disposed within the interior space of the ink reservoir; a printing device configured for receiving the ink reservoir, the printing device including a processor for receiving ink level information that is coupled through the ink reservoir by the sensor within the interior space of the ink reservoir (figure 3, reference 12, 14; column 1, lines 5-11)
- {claim 3} the ink reservoir includes a sidewall (figure 3, reference 64)
- {claim 8} A replaceable printing component (as applied to claim 7)
- {claims 10-11} A replaceable printing component (as applied to claim 7) wherein the replaceable printing component is a replaceable ink reservoir (abstract; column 1)
- {claims 14, 16-17} The printing system (as applied to claim 13)
- {claim 21} A method (as applied to claim 19)
- {claims 23-25} The replaceable ink container (as applied to claim 22)

Maurelli et al differs from the claimed invention in that it does not disclose:

- {claim 1} the sensor and processor are radio frequency interfaces
- {claim 2} a sensor electrically connected to the radio frequency interface disposed within the interior space of the ink reservoir, the sensor providing a sensor output signal indicative of ink level within the interior space of the ink reservoir to the radio frequency interface
- {claim 3} the radio frequency interface includes an antenna for coupling a radio frequency signal through the sidewall to the printing system
- {claim 4} the radio frequency interface within the interior space of the ink reservoir is enclosed in an encapsulant material and wherein the encapsulant material is at least partially surrounded by ink within the interior of the ink reservoir

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- {claim 5} the sensor is a pair of electrodes disposed within the interior space of the ink reservoir to measure electrical continuity through ink within the interior space of the ink reservoir
- {claim 6} the sensor is a pair of electrodes disposed within the interior space of the ink reservoir to measure electrical capacitance between the pair of electrodes
- {claim 8} the linking device is a radio frequency linking device for providing a radio frequency signal
- {claim 10} the linking device includes a sensor having a pair of electrodes disposed within the interior space of the ink reservoir to measure electrical continuity through ink within the interior space of the ink reservoir
- {claim 11} the linking device includes a sensor having a pair of electrodes that are disposed within the interior space of the ink reservoir to measure capacitance between the pair of electrodes
- {claim 14} the first wireless link is a radio frequency transmitter for transmitting a radio frequency signal and the second wireless link is a radio frequency receiver for receiving the radio frequency signal and determining the replaceable reservoir based thereon
- {claim 16} the first wireless link includes a pair of electrodes disposed within the interior space of the replaceable print material reservoir to measure electrical continuity of ink within the replaceable print material reservoir
- {claim 17} the first wireless link includes a pair of electrodes disposed within the interior space of the replaceable print material reservoir to measure capacitance between the pair of electrodes
- {claim 21} the transferring status information is accomplished by providing a radio frequency signal that couples through a sidewall of the ink reservoir
- {claim 23} the sensing system includes a pair of electrodes disposed in the interior space of the ink reservoir for measuring electrical continuity of ink within the ink reservoir

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- {claim 24} the sensing system includes a pair of electrodes for measuring capacitance between the pair of electrodes
- {claim 25} the sensing system senses more than one parameter of ink within the ink reservoir

Walker discloses:

- {claim 1} the sensor and processor are radio frequency interfaces (column 2, lines 8-14)
- {claim 3} the radio frequency interface includes an antenna for coupling a radio frequency signal through the sidewall to the printing system (figure 9, reference 82; column 7, lines 32-38)

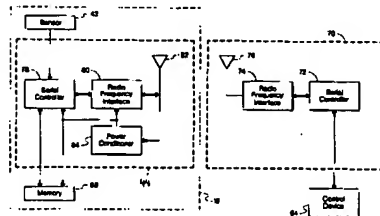


Fig. 9

- {claim 5} the sensor is a pair of electrodes disposed within the interior space of the ink reservoir to measure electrical continuity through ink within the interior space of the ink reservoir (column 4, lines 39-43; column 5, lines 30-49)
- {claim 6} the sensor is a pair of electrodes disposed within the interior space of the ink reservoir to measure electrical capacitance between the pair of electrodes (column 5, lines 8-20)
- {claim 8} the linking device is a radio frequency linking device for providing a radio frequency signal (column 2, lines 8-14)
- {claim 10} the linking device includes a sensor having a pair of electrodes disposed within the interior space of the ink reservoir to measure electrical continuity through ink within the interior space of the ink reservoir (column 4, lines 39-43; column 5, lines 30-49)

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- {claim 11} the linking device includes a sensor having a pair of electrodes that are disposed within the interior space of the ink reservoir to measure capacitance between the pair of electrodes (column 5, lines 8-20)
- {claim 14} the first wireless link is a radio frequency transmitter for transmitting a radio frequency signal and the second wireless link is a radio frequency receiver for receiving the radio frequency signal and determining the replaceable reservoir based thereon (column 2, lines 8-14)
- {claim 16} the first wireless link includes a pair of electrodes disposed within the interior space of the replaceable print material reservoir to measure electrical continuity of ink within the replaceable print material reservoir (column 4, lines 39-43; column 5, lines 30-49)
- {claim 17} the first wireless link includes a pair of electrodes disposed within the interior space of the replaceable print material reservoir to measure capacitance between the pair of electrodes (column 5, lines 8-20)
- {claim 21} the transferring status information is accomplished by providing a radio frequency signal that couples through a sidewall of the ink reservoir (figure 8; column 2, lines 8-14)

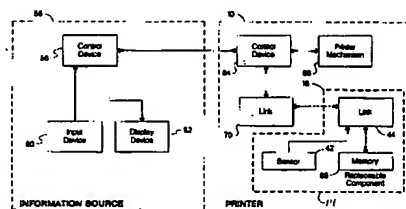


Fig. 8

- {claim 23} the sensing system includes a pair of electrodes disposed in the interior space of the ink reservoir for measuring electrical continuity of ink within the ink reservoir (column 4, lines 39-43; column 5, lines 30-49)
- {claim 24} the sensing system includes a pair of electrodes for measuring capacitance between the pair of electrodes (column 5, lines 8-20)

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- {claim 25} the sensing system senses more than one parameter of ink within the ink reservoir (i.e. electrical continuity and capacitance as taught in claims 23 and 24)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Walker into the invention of Maurelli et al. The motivation for the skilled artisan in making the sensor and processor radio frequency interfaces is to gain the benefit of being able to easily direct and transmit information; the facility of transmitting information through radio waves is well known to one of ordinary skill in the art. Maurelli et al also teaches "As discussed in more detail below, different types of sensors 14 could be employed to produce different types of signals depending upon the circumstances under which it is desired to disable the ink jet nozzles," which naturally suggests replacing the sensor with a radio frequency interface. The motivation for the skilled artisan in using a pair of electrodes to measure continuity is to gain the benefit of detecting and indicating ink level (column 5, lines 30-49). The motivation for the skilled artisan in using a pair of electrodes to measure electrical capacitance between the electrodes is to gain the benefit of measuring ink level; the capacitance value varies with an amount of ink within the ink reservoir (column 5, lines 8-20). The combination of Maurelli et al and Walker naturally suggests a sensor electrically connected to the radio frequency interface disposed within the interior space of the ink reservoir, the sensor providing a sensor output signal indicative of ink level within the interior space of the ink reservoir to the radio frequency interface and the radio frequency interface within the interior space of the ink reservoir is enclosed in an encapsulant material and wherein the encapsulant material is at least partially surrounded by ink within the interior of the ink reservoir (especially in view of Maurelli et al figure 3, reference 14).

Response to Arguments

4. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S Liang whose telephone number is (703) 305-4754. The examiner can normally be reached on 8:30-5 Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (703) 308-4896. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

lsl

July 8, 2003



Stephen D. Meier
Primary Examiner